1300 19th Street, N.W. — Suite 600
Washington, DC 20036
(202) 659-9076 - Phone
(202) 659-9344- Facsimile

Roylance, Abrams, Berdo & Goodman, L.L.P.

Stacey Longanecker
Direct Dial: (202) 530-7370
slonganecker@roylance.com

Fax

To:	USPTO Group Art Unit 2611 Examiner Nader Bolourchi	**From:**	Stacey Longanecker
Fax:	(571) 273 8300 (571) 273 8064	**Pages:**	6
Phone:		**Date:**	September 8, 2008
Re:	Ser. No.: 10/518,073	**CC:**	

☑ **Urgent** ☑ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

- **Comments:**

Please see attached for the interview scheduled September 12, 2008 at 10 AM.

Respectfully submitted,

Stacey Longanecker, Reg. No. 33,952

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Applicant Initiated Interview Request Form

Application No.: 10/518,673 First Named Applicant: Peter James Duffett-Smith

Examiner: Bolourchi, Nader Art Unit: 2611 Status of Application: pending after final

Tentative Participants:

(1) Stacey Longanecker (2) Peter James Duffett-Smith

(3) Michael Brunner (4) _____

Proposed Date of Interview: September 12, 2008 **Proposed Time:** 10 (AM)/PM

Type of Interview Requested:

(1) ☐ Telephonic (2) ☒ Personal (3) ☐ Video Conference

Exhibit To Be Shown or Demonstrated: ☒ YES ☐ NO

If yes, provide brief description: attached claim chart

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) §112, 1st rej	1-21, 23-33		☐	☐	☐
(2)			☐	☐	☐
(3)			☐	☐	☐
(4)			☐	☐	☐

☒ Continuation Sheet Attached

Brief Description of Argument to be Presented:

An interview was conduction on the above-identified application on _____.

NOTE: This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

Stacey Longanecker
Applicant/Applicant's Representative Signature

STACEY LONGANECKER
Typed/Printed Name of Applicant or Representative

33,952
Registration Number, if applicable

Examiner/SPE Signature

Claim 1 of US Appln. Serial No. 10/518,073	References to priority application EP 1 376 150	Cross-References to Published PCT WO 03/107029
1. (Previously Presented) A method of finding the time offset between signals transmitted by at least one of a plurality of transmitters (A,B,C) of a communications network and received by a receiver attached to a terminal, the method comprising the steps of	Paragraph [0009] and Fig. 1 used to describe background on finding time offsets between transmitters A,B, C Per paragraph [0013], Fig. 2 (first embodiment) transmitters 201, 202, 203 and terminal 207 Per paragraph [0064], Fig. 8 (another embodiment) transmitters 801, 802, 803 and terminal 807	See paragraph that commences on line 19 of page 3. See page 5, lines 15-18 See paragraph that commences on line 25 of page 19.
(a) creating at the terminal a terminal section ($r(t)$) of a representation of the signals from the transmitters received by the receiver;	Paragraph [0055] describes how a signal from a transmitter 201 (A) received at the terminal 207 can be represented by a convolution of the transmitted signal $S_A(t)$ and the channel profile $h_A(t)$. For all signals from the N transmitters, paragraph [0055] discloses a received signal $r(t)$ represented as: $r(t) = \sum_{i=1}^{N} S_i(t) * h_i(t)$,	See paragraph that commences on line 26 of page 16.
(b) creating a first section ($S_A(t)$) of a representation of the signal transmitted by a first (A) of said transmitters, and creating a second section ($S_B(t)$) of a representation of the signal transmitted by a second (B) of said transmitters, each of which sections overlaps in time with the terminal section ($r(t)$);	Per paragraph [0017], each sampling device 204, 205, 206 records a section of the signals transmitted by its associated Node B 201, 202, 203 respectively. Per paragraph [0063], one of the requirements of the invention is that the recordings of the signals made at A, B, C, (say 201, 202 203) and R (say 207) overlap in time with	See paragraph that commences on line 4 of page 7. See paragraph that commences on line 13 of page 19.

	each other.	
(c) creating a first function ($\hat{a}(\tau)$) dependent on the first section ($S_A(t)$) and the terminal section ($r(t)$),	Paragraphs [0059] and [0060] describe how a cross-correlation profile $\hat{a}(\tau)$, which exemplifies the recited first function, is created $a(\tau) = r(t) \otimes S_A(t)$ $= [S_A(t) * h_A(t) + S_B(t) * h_B(t) + \ldots] \otimes S_A(t)$ $\approx S_A(t) * h_A(t) \otimes S_A(t)$ $= p_A(\tau) * h_A(t),$ Then $\hat{a}(\tau)$ is the windowed version of $a(\tau)$.	See paragraphs that commence on lines 9 and 19 of page 18.
and convolving the first section with the first function to form a blurred estimate ($b(t)$) of the signal received at the terminal from the first transmitter (A);	Paragraph [0061] : The windowed cross-correlation profile $\hat{a}(\tau)$ is now convolved with $S_A(t)$ and, since the signal from A dominates, the result represents a good estimate $b(t)$ of the quantity to be subtracted from a version of $r(t)$ which has been convolved with the autocorrelation profile of $S_A(t)$. Thus $b(t) = S_A(t) * \hat{a}(\tau)$ $\approx S_A(t) * p_A(\tau) * h_A(t).$ Paragraph [0055]: "In practice, it has been appreciated that the component of the signal received at the terminal 207 from, say the transmitter 201 annotated as "A" can be represented by a convolution of the transmitted signal $S_A(t)$ and the 'channel profile' $h_A(t)$ which models the multi-path effects. This constitutes a 'blurring' of the actual received signal."	See paragraph that commences on line 26 of page 18. See paragraph that commences on line 26 of page 16.

	See also paragraph [0057] which states: "One method of overcoming the de-convolution issue is of particular interest here, and this involves subtraction of a 'blurred' estimate of the brightest signal received at the terminal from a 'blurred' version of $r(t)$, the blurring here again referring to the process of convolution.	See paragraph that commences on line 19 of page 17.
(d) creating a second function ($p_A(\tau)$) dependent on the first section ($S_A(t)$),	The text immediately following the equation in paragraph [0059] describes an auto-correlation profile that exemplifies the recited second function dependent on the first section $S_A(t)$: where the $\otimes$ symbol represents cross-correlation, τ is the delay, and $p_A(\tau)$ is the auto-correlation profile of $S_A(t)$.	See text that commences on line 13 of page 18.
and convolving the terminal section with the second function to form a blurred terminal section ($r(t) * p_A(\tau)$);	See the equations in paragraph [0062] and particularly the first line that contains $r(t) * p_A(\tau)$; paragraph [0055] states that the symbol "*" represents convolution	See equations in paragraph that commences on line 1 of page 19; See also lines 7-8 on page 17.
(e) subtracting the blurred estimate ($b(t)$) from the blurred terminal section ($r(t) * p_A(\tau)$) to produce a blurred residual representation ($r'(t) = r(t) * p_A(\tau) - b(t)$); and	See calculating blurred estimate in paragraph [0023]; use of blurred estimate according to the invention in paragraphs [0029], [0030] and [0057]; the estimate b(t) is described in paragraph [0061]; See ($r'(t) = r(t) * p_A(\tau) - b(t)$) in the first line of the equations in paragraph [0062]	See paragraph that commences on line 31 of page 8, the text at lines 14-32 of page 10, and the paragraph that commences on line 19 of page 17; the estimate b(t) is described in lines 26-29 of page 18. See line 3 on page 19.
(f) estimating the time offset between	Per paragraph [0062]: "The blurred residual r'(t) can therefore be cross-correlated	See paragraph that commences on line 8-11 of page 19.

the blurred residual representation ($r'(t)$) and the second section ($S_B(t)$).	with $S_B(t)$ in order to estimate the time offset of the signal from transmitter 202/B. The procedure is then repeated until there are no signals of interest left to be measured."	

Please note that claim 9 is substantially the same as claim 1, except in its recitation in step (b) of creating a transmitter section using a signal transmitted by "an other transmitter" in lieu of the recitation in step (b) in claim 1 of creating a first section and a second section using signals transmitted by "a first (A) of said transmitters" and "a second (B) of said transmitters."

Thus, two embodiments are claimed via claims 1 and 9. Claims 23, 25, 27, 29 and 31 are different types of claims (e.g., apparatus, telecommunications terminal, communications network, computing device, and computer program) having substantially similar recitations directed to the embodiment recited in claim 1. Claims 24, 26, 28, 30 and 32 are different genres of claims (e.g., apparatus, telecommunications terminal, communications network, computing device, and computer program) having substantially similar recitations directed to the embodiment recited in claim 9.

The apparatus recited in claims 23 and 24 comprises processing means at different locations as described in paragraphs [0027] through [0029] of the European priority application (and page 9, line 31 through page 10, line 25 of the published PCT). For example, claims 23 – 26 recite that step (a) occurs at the terminal, but the processing means in steps (b) – (f) can be located anywhere per paragraph [0027] of the European priority application.

To provide additional scope of protection, claims 27 and 28 recite a computing device(s) as item (a) which is exemplified by an SLMC per paragraph [0013] in the European priority application (and page 5, lines 17-18 of the published PCT), a terminal (exemplified by 207 in Fig. 2 or 807 in Fig. 8), sampling devices (exemplified by devices 204-206 for respective transmitters 201-203 and devices 804-806 for respective transmitters 801-803.

The computing device in claims 29 and 30 and the computer program in claims 31 and 32 and the recited steps that they perform are located, by way of an example, at an SLMC (per paragraph [0013] in the European priority application and page 5, lines 17-18 of the published PCT) or other computing device (e.g., described in paragraph [0028] of the European priority application and page 10, lines 1 - 12 of the published PCT) that can be located anywhere in the network.